DOCUMENT RESUME

ED 039 114 RE 002 796

AUTHOR Ho, Wai-Ching; Eiszler, Charles F.
TITLE Interaction Effects of Socio-economic Status, Intelligence and Reading Program on Beginning Reading Achievement.
PUB DATE Mar 70
NOTE 16p.; Paper presented at the meeting of the American Educational Research Association, Minneapolis, Minn., Mar. 2-6, 1970

EDRS PRICE EDRS Price MF-$0.25 HC-$0.90
DESCRIPTORS Achievement Tests, *Beginning Reading, *Economic Status, Grade 1, Grade 2, Initial Teaching Alphabet, *Intelligence Level, Intelligence Tests, Interaction, Low Achievement Factors, Reading Achievement, Reading Instruction, *Reading Research, *Social Background

ABSTRACT

An investigation is being made of the effects of the interaction between differing socioeconomic backgrounds and two beginning reading programs on the reading achievement of pupils at three ability levels. This report gives the results of data that have been collected for grades 1 and 2 only. Participating were 754 pupils in a small city school district in southern Michigan. The Initial Teaching Alphabet (i/t/a) was used with 350 of the pupils, traditional orthography (T.O.) with the rest. Reading achievement was determined by the Standard Achievement Test; IQ by the Otis Quick-Scoring Test, Form AS; and socioeconomic status (SES) from the fathers' occupations and educational backgrounds. Data indicated that (1) high SES background seemed to benefit high-ability pupils more than low- or middle-ability pupils; (2) first graders from all ability levels and SES backgrounds using i/t/a outperformed their T.O. counterparts on sound-symbol association tests; (3) i/t/a was especially helpful to middle-ability, low-SES second graders; and (4) in no instance did T.O. pupils significantly outperform i/t/a pupils on all grade-1 and grade-2 tests. Graphs and references are included. (NH)

ED039114

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Interaction Effects of Socio-economic Status, Intelligence and Reading Program on Beginning Reading Achievement[1]

Wai-Ching Ho and Charles F. Eiszler
Educational Research Council of America

This is a cooperative research endeavor between the Educational Research Council of America and one of its participating school districts, the Niles Community Schools, Niles, Michigan. Acknowledgment is due to the school superintendent, Mr. Richard B. Warren, the administrative staff, and the first and second grade teachers of the Niles schools.

RE002 796

[1] A paper presented at the annual meeting of the American Educational Research Association in Minneapolis in March, 1970.

Interaction Effects of Socio-economic Status, Intelligence and Reading Program on Beginning Reading Achievement

Wai-Ching Ho and Charles F. Eiszler[1]
Educational Research Council of America

It is well recognized that socio-economic status, IQ, and reading program are important determinants of the reading achievement of beginning readers. Little is known, however, about the interaction of these variables. The present study investigates the effects of the interaction between differing socio-economic backgrounds and two beginning reading programs (i.t.a. and T.O.)[2] on the reading achievement of pupils at three ability levels. The study is still underway. Data have been collected for the first three grades. This report, however, is limited to the results of grades one and two, since the analysis of the third grade data has not been completed.

PROCEDURE

Subjects

An initial sample of 754 pupils from one small city school district in southern Michigan[3] participated in the study. This was a system-wide study which included two groups of pupils who started grade one in two consecutive school years. The T.O. group began first grade in 1965; the i.t.a. group entered first grade in 1966. Not all information intended to be collected was available for every pupil. Pupils with complete data who were in the analysis included 350 pupils in the i.t.a. group and 315 pupils in the T.O. group.

Reading Programs

The i.t.a. pupils used the Greater Cleveland Reading Program (GCRP) in both grades, whereas the T.O. pupils used the Ginn basal reader. By the end of grade two, almost all i.t.a. pupils had completed the GCRP transition

---

[1] Susan Detienne, research assistant of the Educational Research Council of America, assisted in compiling the data and in editing.

[2] i.t.a. refers to the initial teaching alphabet program; T.O. refers to the traditional orthography program.

[3] Niles Community Schools, Niles, Michigan.

program which helps pupils to make transition to T.O. In the post-transition period, the i.t.a. pupils used the SRA Reading Laboratory material.

Instruments

Reading achievement was measured at the end of grades one and two by the reading subtests in the Stanford Achievement Test: Primary I level for grade one and Primary II level for grade two. The grade one tests were given to each group in its own instructional medium, but testing was done in T.O. in grade two.

Ability was determined by IQ scores on the Otis Quick-Scoring Test, Form AS. It should be pointed out that these IQ's were obtained when both groups entered grade three. The grade three IQ's were used for three reasons: (1) The grade one IQ's were available only for the i.t.a. group, because i.t.a. was adopted system-wide in 1966. (2) The grade one IQ's, as compared to the grade three IQ's, generally seem to be "overestimates."[1] (3) The grade three IQ's of the i.t.a. group and the T.O. group were very similar as will be observed in Table 1 on page 4. Results of the t tests showed no significant difference between the IQ's of i.t.a. and T.O. pupils of each ability level.

Socio-economic status (SES) was based on the combined index of the father's education and occupation. Categories of father's education and occupation were those used by Coleman (Coleman, 1966) in the study of equality of educational opportunity. (See Appendix A.) In order to make it possible for classifying pupils into different SES groups, numerical value was assigned to each category as follows:

Father's Education

Category	Numerical Value
Attended graduate school (H)	1
Graduated from college (G)	2
Completed some college (F)	3
Attended technical school (E)	4
Graduated from high school (D)	5
Completed some high school (C)	6
Completed grade school (B)	7
Did not complete grade school (A)	8

Father's Occupation

Category	Numerical Value
Professional (I)	1
Official (B)	2
Manager (C)	3
Technical (A)	4
Salesman (E)	5
Farm manager (owner) (F)	6
Skilled worker (J)	7
Semi-skilled worker (D)	8
Laborer (H)	9
Farm worker (G)	10

---

[1] The Otis Test was administered to a subsample of 350 pupils in both grade one and grade three. The overall distribution of grade three scores shifted downward. Grade one IQ's averaged 4.24 points higher than grade three IQ's.

The numerical assignment for the occupational categories was made with reference to Duncan's socio-economic index scores and the NORC occupational prestige scores for major occupation groups (Reiss, et.al., 1961).[1] Although occupational scaling is undoubtedly a very complex matter, the simple scheme described above seems adequate for the broad SES classification required in this study. (See Table B1 in Appendix B.) The numerical values of father's education and occupation were then combined and used as the SES index for each pupil.

Analysis

The pupils were divided into three ability groups according to IQ's. Each group represented approximately one third of all the i.t.a. and T.O. pupils. The IQ's of the high ability group ranged from 109 to 145, with an average of 117.80. The IQ's of the middle ability group ranged from 98 to 108, with an average of 103.50. The IQ's of the low ability group ranged from 79 to 97, with an average of 90.32.

Within each ability level, the pupils were further subdivided by three SES categories: high, average, and low. Each category consisted of an approximate third of all the i.t.a. and T.O. pupils. The SES categories were determined by the pupils' combined SES index scores: 2-11 for the high SES category; 12-13 for the average SES category; 14-17 for the low SES category. In general, the three SES categories may be described as below:

(1) High SES pupils' fathers were likely to have some college education and were engaged in a variety of professional, managerial, and white collar occupations.

(2) Average SES pupils' fathers were mainly high school graduates and were skilled or semi-skilled workers.

(3) Most low SES pupils' fathers did not complete high school and were semi-skilled or unskilled workers.

The mean IQ and number of pupils for each SES category within each ability level are given in Table 1.

---

[1] The rating of farm owner or manager is higher than those in Duncan's socio-economic index and the NORC scores. The adjustment was made for two reasons: (1) On the average, the farmers included in the study were at least high school graduates. (2) Duncan suggested that the income of the farmers was probably underestimated.

Table 1

Mean IQ and Number of Pupils for each SES Category within each Ability Level in the Analysis

Ability Level	SES Level	i.t.a.		T.O.		Total	
		N	Mean IQ	N	Mean IQ	N	Mean IQ
High Ability	High	68	119.66	60	118.97	128	119.34
	Average	35	115.34	28	116.96	63	116.06
	Low	25	115.24	20	116.60	45	115.84
	Total	128	117.62	108	118.01	236	117.80
Middle Ability	High	30	104.37	31	103.90	61	104.13
	Average	36	102.86	38	103.11	74	102.98
	Low	45	103.33	40	103.68	85	103.49
	Total	111	103.47	109	103.54	220	103.50
Low Ability	High	18	91.06	19	91.26	37	91.16
	Average	37	91.43	23	90.52	60	91.08
	Low	56	89.77	56	89.48	112	89.63
	Total	111	90.53	98	90.07	209	90.32

For each ability level, a two-way analysis of variance (reading program by SES) was performed to compare the i.t.a. and T.O. pupils on each of the grade one and grade two reading tests. Ten analyses of variance were made for each ability level. There were 30 analyses in all.

RESULTS

The results are presented in Tables 2 through 5. Tables 2 and 4 give the mean grade equivalent scores of each subgroup on each test in grade one and grade two. These mean scores are also presented graphically in Appendix C. Tables 3 and 5 summarize the results of the 30 analyses of variance at these two grade levels. Due to limited space, only the degrees of freedom (d.f.) and the F values are reported here.

Table 2

Grade One Mean Grade Equivalent Scores
of the i.t.a. Group and T.O. Group

Ability Level	SES Level	Word Reading (1.9)*		Paragraph Meaning (1.9)		Vocabulary (1.9)		Spelling (1.9)		Word Study Skills (1.9)	
		i.t.a.	T.O.	i.t.a.	T.O.	i.t.a.	T.O.	i.t.a.	T.O.	i.t.a.	T.O.
High Ability	High	3.05	2.49	2.66	2.65	2.84	3.03	3.05	2.70	4.51	3.49
	Average	2.82	2.28	2.51	2.23	2.60	2.49	2.86	2.23	3.61	2.93
	Low	2.98	2.47	2.36	2.30	2.76	2.85	2.78	2.38	3.76	2.83
	Total	2.95	2.41	2.51	2.39	2.74	2.79	2.90	2.44	3.96	3.08
Middle Ability	High	2.71	2.21	2.12	2.09	2.20	2.48	2.82	2.25	3.71	2.81
	Average	2.51	2.06	2.13	1.99	2.15	2.18	2.50	2.18	3.17	2.42
	Low	2.49	2.01	2.05	1.89	2.18	2.18	2.51	2 04	3.16	2.30
	Total	2.57	2.10	2.10	1.99	2.18	2.28	2.61	2.15	3.34	2.51
Low Ability	High	2.40	1.84	1.84	1.78	2.18	1.98	2.47	1.92	2.68	2.15
	Average	2.26	1.90	1.81	1.72	1.91	1.90	2.32	2.03	2.65	2.14
	Low	2.16	1.80	1.74	1.77	1.91	1.88	2.32	1.83	2.56	1.88
	Total	2.28	1.84	1.80	1.75	2.00	1.92	2.37	1.93	2.63	2.05

* Grade placement at time of testing

Table 3

Results of Grade One Analysis of Variance (Program x SES)
within each Ability Level

Ability Level	Source of Variance	d.f.	F Value				
			Word Reading	Paragraph Meaning	Vocabulary	Spelling	Word Study Skills
High Ability	A (Program)	1,230	49.53**	1.68	—[a]	36.72**	26.33**
	B (SES)	2,230	3.07*	4.70**	3.19*	7.53**	7.90**
	A x B	2,230	—	—	—	1.36	—
Middle Ability	A (Program)	1,214	38.56**	2.24	1.06	33.33**	24.78**
	B (SES)	2,214	2.87	1.17	1.32	4.07*	3.98*
	A x B	2,214	—	—	—	—	—
Low Ability	A (Program)	1,203	32.45**	—	—	27.60**	16.42**
	B (SES)	2,203	1.22	—	1.84	—	—
	A x B	2,203	—	—	—	—	—

[a] F values of less than one are not reported.
* Significant at the .05 level.
** Significant at the .01 level.

Table 4

Grade Two Mean Grade Equivalent Scores
of the i.t.a. Group and T.O. Group

Ability Level	SES Level	Language (2.9)*		Paragraph Meaning (2.9)		Word Meaning (2.9)		Spelling (2.9)		Word Study Skills (2.9)	
		i.t.a.	T.O.	i.t.a.	T.O.	i.t.a.	T.O.	i.t.a.	T.O.	i.t.a.	T.C
High Ability	High	3.93	3.77	3.89	3.86	3.99	3.99	3.74	3.60	5.38	4.78
	Average	3.40	3.17	3.30	3.24	3.35	3.38	3.27	3.12	4.66	3.91
	Low	3.44	3.59	3.26	3.51	3.34	3.44	3.13	3.19	4.88	4.68
	Total	3.59	3.51	3.48	3.54	3.56	3.60	3.38	3.30	4.97	4.46
Middle Ability	High	3.28	3.19	3.12	3.32	3.25	3.35	3.18	3.11	4.26	4.04
	Average	3.09	3.11	2.96	3.15	3.02	3.32	3.00	3.06	4.13	3.47
	Low	3.10	2.82	2.95	2.86	3.01	2.82	3.26	2.64	4.42	2.81
	Total	3.16	3.04	3.01	3.11	3.09	3.16	3.15	2.94	4.27	3.44
Low Ability	High	2.97	2.60	2.69	2.73	3.03	3.13	3.07	2.67	4.38	2.65
	Average	2.75	2.61	2.55	2.60	2.68	2.98	2.66	2.75	3.51	2.80
	Low	2.76	2.56	2.47	2.75	2.79	2.84	2.82	2.51	3.34	2.44
	Total	2.83	2.59	2.57	2.70	2.83	2.98	2.85	2.64	3.74	2.63

* Grade placement at time of testing

Table 5

Results of Grade Two Analysis of Variance (Program x SES)
within each Ability Level

Ability Level	Source of Variance	d.f.	F Value				
			Language	Paragraph Meaning	Word Meaning	Spelling	Word Study Skills
High Ability	A (Program)	1,230	—[a]	—	—	—	4.96*
	B (SES)	2,230	5.50**	8.09**	7.00**	6.70**	4.01*
	A x B	2,230	—	—	—	—	—
Middle Ability	A (Program)	1,214	1.48	—	—	3.65	15.41**
	B (SES)	2,214	2.76	2.15	3.07*	1.08	2.23
	A x B	2,214	—	—	1.27	3.65*	3.80*
Low Ability	A (Program)	1,203	4.61*	—	—	2.83	33.02**
	B (SES)	2,203	—	—	1.22	—	3.51*
	A x B	2,203	—	—	—	1.40	2.65

[a] F values of less than one are not reported.
* Significant at the .05 level.
** Significant at the .01 level.

Following are some significant results that emerge.

1. High SES background seemed to benefit high ability pupils more than the middle or low ability pupils. For high ability pupils, performance among different SES groups on all grades one and two tests was significantly different in favor of the high SES group. Few significant differences were found among the SES groups for the middle and low ability pupils, even though the high SES group scored consistently higher than the middle and low SES groups.

2. In grade one, the i.t.a. pupils of all ability levels and SES backgrounds performed significantly better than their T.O. counterpart on tests which require sound-symbol association such as Word Reading, Spelling, and Word Study Skills. They maintained their superiority in Word Study Skills even when tested in T.O. in grade two. It should be noted that, with only one exception, the i.t.a. pupils from the low SES category outperformed even the high SES T.O. pupils of the corresponding ability level on all these tests.

3. In grade two, the i.t.a. program seemed to be especially helpful to the middle ability pupils from the low SES background. Significant interaction between reading program and SES was found for the second grade Spelling and Word Study Skills at the middle ability level. This is due to the superiority of the i.t.a. pupils from low SES homes over their T.O. counterpart as indicated in Table 4 and Figures 1 and 2. In fact, at the middle ability level, the mean scores of the i.t.a. pupils of low SES background on the second grade tests were all above the national norms, while the mean scores of the T.O. pupils of low SES were all below the norms.

4. In no instance did the T.O. pupils significantly outperform the i.t.a. pupils on all the grades one and two tests.

Figure 1: Middle Ability Pupils' Mean Grade Equivalent Score In Spelling At Grade Placement 2.9

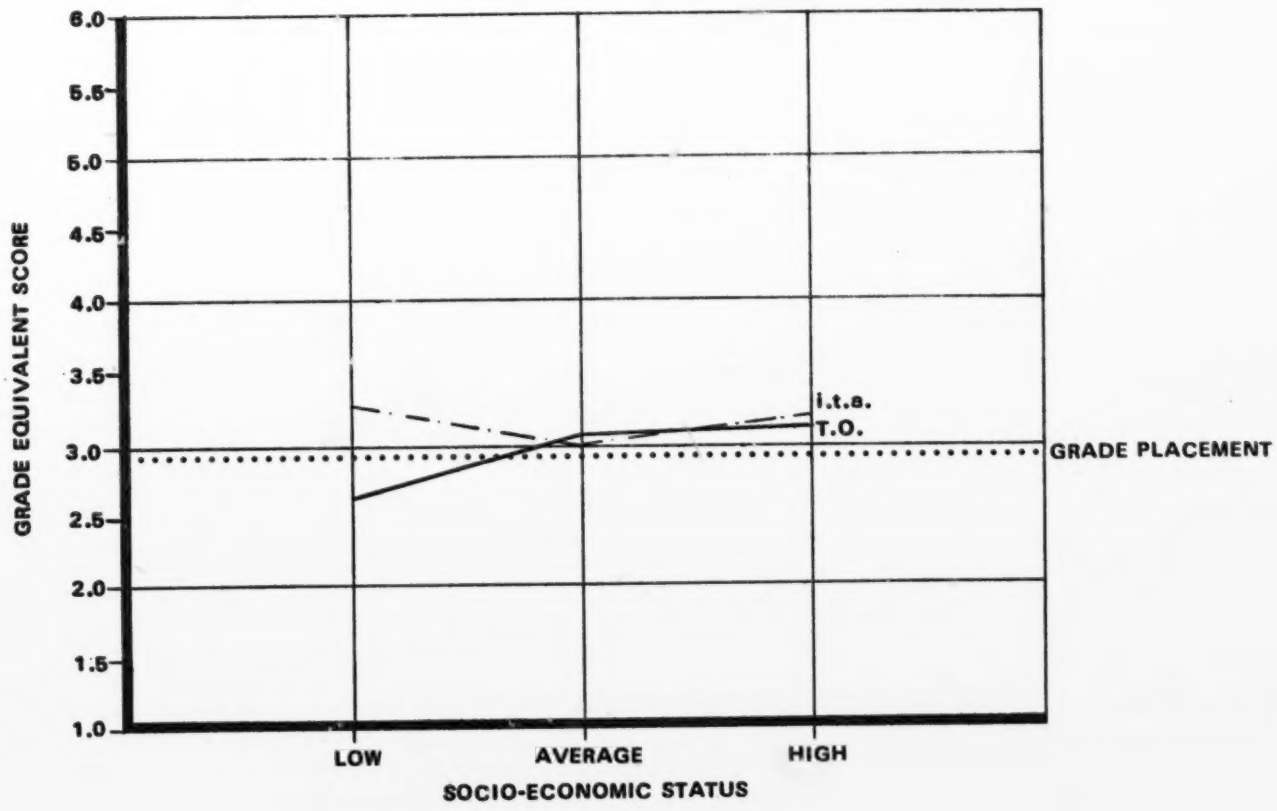
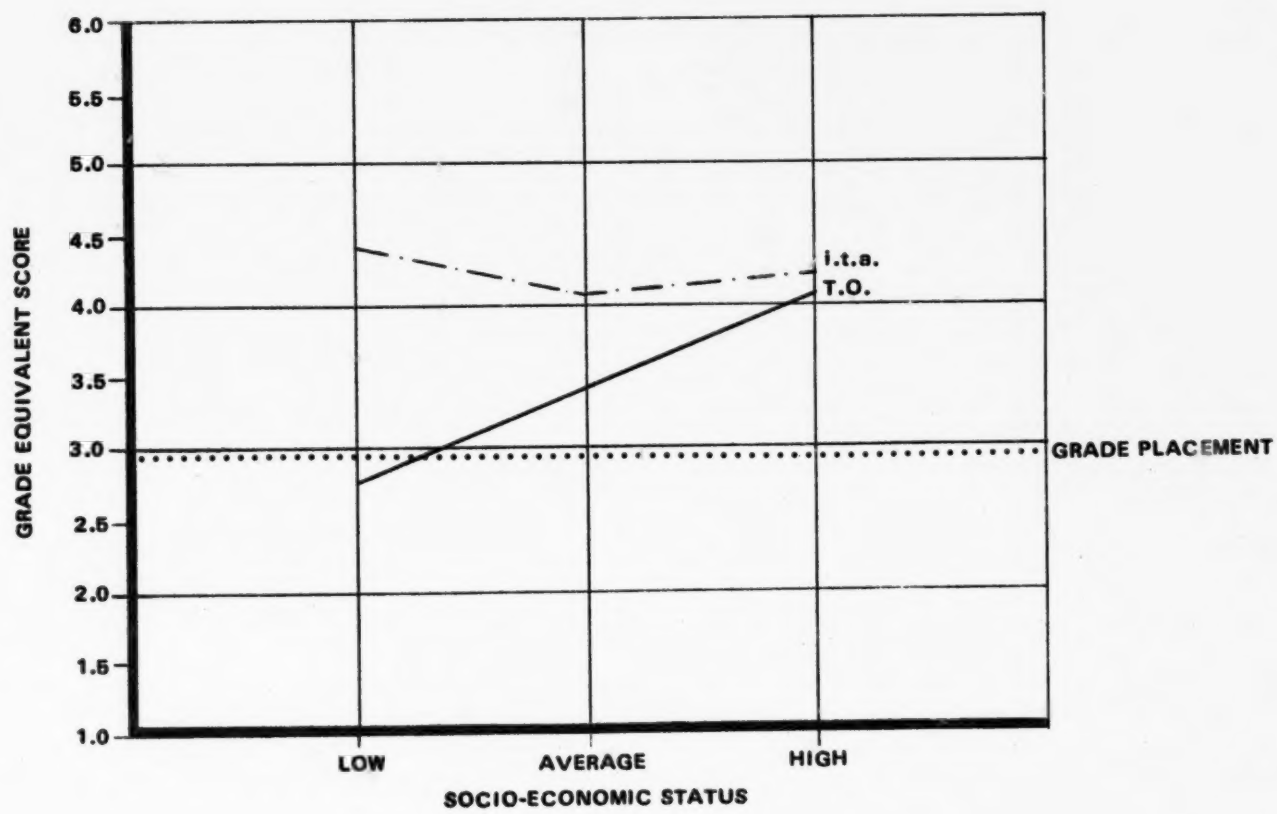


Figure 2: Middle Ability Pupils' Mean Grade Equivalent Score In Word Study Skills At Grade Placement 2.9



DISCUSSION

Consistent with other studies (Tanyzer and Alpert, 1966; Chasnoff, 1967 and 1968; Fry, 1966 and 1967; Hayes, 1966 and Hayes and Wuest, 1967; Hahn, 1966 and 1967; and Mazurkiewicz, 1966 and 1967), the i.t.a. pupils demonstrated an initial superiority in decoding skills when tested in i.t.a. in grade one. The present study also substantiates the finding of a previous study (Ho, Eiszler, and Stroh, 1969) that the decoding skills provided by i.t.a. are beneficial to pupils of various ability levels. It demonstrates further that with proper instruction, such as that provided by GCRP, the i.t.a. pupils of differing ability levels would maintain their work study skills in grade two even when tested in T.O.[1] This study shows once again that the i.t.a. pupils of all ability and SES levels did not suffer in T.O. spelling as once predicted by some educators.

In order to make i.t.a. more effective as an initial instructional medium, however, effort should be made to take advantage of the i.t.a. pupils' superior decoding skills in enhancing the pupils' vocabulary and reading comprehension. Since the i.t.a. books need not be as limited in vocabulary as T.O. books for beginning readers, provision of interesting i.t.a. materials in wide range of subject matter areas is possible. This may help pupils increase their zest and develop their skills in learning to read.

As expected, pupils from the high SES families (professional or white collar workers) achieved better than those from the average and low SES homes (blue collar workers) within each ability level. However, the high ability pupils benefited more from the high SES background than the average and low ability pupils. Little or inconsistent differences were found between pupils of the average and low SES backgrounds probably because of the overlapping in the classification of these two levels. Both levels mainly consisted of blue collar workers.

It appears that instruction can help compensate for some deficiency in the home background. Thus, for some tests (such as Word Study Skills, etc.) the i.t.a. pupils from the low SES background outperformed even those T.O. pupils from the high SES background when ability level was held constant. It is particularly interesting to note that at the end of grade two, the T.O. pupils of middle ability from low SES homes achieved below the national norms on all tests while the i.t.a. counterpart achieved above the national norms on all these tests. The study suggests that the achievement of the middle ability pupils of low SES background could be considerably improved by appropriate instruction.

---

[1] In the study by Ho, Eiszler, and Stroh where the i.t.a. pupils used the Early to Read i.t.a. program, only the high ability pupils excelled their T.O. counterpart in second grade Word Study Skills.

REFERENCES

Chasnoff, R.E. Two alphabets. Elementary School Journal, 1967, 67, 257-64.

Chasnoff, R.E. Two alphabets: A follow-up. Elementary School Journal, 1968, 68, 251-7.

Coleman, James S., et.al. Equality of Educational Opportunity. Washington; U.S. Government Printing Office, 1966.

Fry, E.B. First grade reading instruction using diacritical marking system, initial teaching alphabet and basal reading system. The Reading Teacher, 1966, 19, 666-669.

Fry, E.B. First grade reading instruction using diacritical marking system, initial teaching alphabet and basal reading system — extended to second grade. The Reading Teacher, 1967, 20, 687-693.

Hahn, H.T. Three approaches to beginning reading instruction — i.t.a., language arts, and basic readers. The Reading Teacher, 1966, 19, 590-594.

Hahn, H.T. Three approaches to beginning reading instruction — i.t.a., language experience, and basic readers — extended into second grade. The Reading Teacher, 1967, 20, 711-715.

Hayes, R.B. i.t.a. and three other approaches to reading in first grade. The Reading Teacher, 1966, 19, 627-630.

Hayes, R.B., & Wuest, R.C. i.t.a. and three other approaches to reading in first grade — extended into second grade. The Reading Teacher, 1967, 20, 694-697, + 703.

Ho, Wai-Ching; Eiszler, Charles; and Stroh, Vickie. Longitudinal effects of i.t.a. on pupils' reading achievement through grade three. Paper presented at AERA Annual Meeting, 1969.

Mazurkiewicz, A.J. i.t.a. and T.O. reading achievement when methodology is controlled. The Reading Teacher, 1966, 19, 606-610.

Mazurkiewicz, A.J. i.t.a. and T.O. reading achievement when methodology is controlled — extended into second grade. The Reading Teacher, 1967, 20, 726-729.

Reiss, A.J., with Duncan, O.D., Hatt, P.K., and North, C.C. Occupations and social status. New York: The Free Press of Glencoe, 1961.

Tanyzer, H.J., and Alpert, H. Three basal reading systems and first grade reading achievement. The Reading Teacher, 1966, 19, 636-642.

APPENDIX A

List of Occupational and Educational Categories

Categories of Father's Occupation

(A) Technical-such as draftsman, surveyor, medical or dental technician, etc.
(B) Official-such as manufacturer, officer in a large company, banker, government official or inspector, etc.
(C) Manager-such as sales manager, store manager, office manager, factory supervisor, etc.
Proprietor or owner-such as owner of a small business, wholesaler, retailer, contractor, restaurant owner, etc.
(D) Semiskilled worker-such as factory machine operator, bus or cab driver, meat cutter, etc.
Clerical worker-such as bankteller, bookkeeper, sales clerk, office clerk, mail carrier, messenger, etc.
Service worker-such as barber, waiter, etc.
Protective worker-such as policeman, detective, sheriff, fireman, etc.
(E) Salesman-such as real estate or insurance salesman, factory representative, etc.
(F) Farm or ranch manager or owner
(G) Farm worker on one or more than one farm
(H) Workman or laborer-such as factory or mine worker, fisherman, filling station attendant, longshoreman, etc.
(I) Professional-such as accountant, artist, clergyman, dentist, doctor, engineer, lawyer, librarian, scientist, college professor, social worker, etc.
(J) Skilled worker or foreman-such as baker, carpenter, electrician, enlisted man in the armed forces, mechanic, plumber, plasterer, tailor, foreman in a factory or mine, etc.
(K) Don't know

Categories of Father's Education

(A) None, or some grade school
(B) Completed grade school
(C) Some high school, but did not graduate
(D) Graduated from high school
(E) Technical or business school after high school
(F) Some college but less than 4 years
(G) Graduated from a 4 year college
(H) Attended graduate or professional school
(I) Don't know

APPENDIX B

TABLE B1

PERCENT OF FATHERS IN EACH OCCUPATION CATEGORY BY EACH SES LEVEL

Fathers' Occupation Categories	High SES Level			Middle SES Level			Low SES Level		
	i.t.a.	T.O.	Total	i.t.a.	T.O.	Total	i.t.a.	T.O.	Total
Professional (Accountant, artist, clergyman, dentist, doctor, engineer, lawyer, college professor, etc.)	31.9%	28.2%	30.1%						
Official (Manufacturer, officer of large)	8.6	6.4	7.5						
Manager, Proprietor or Owner (Small business)	25.0	22.7	23.9						
Technical (Draftsman, surveyor, medical or dental technician)	6.9	11.8	9.3						
Salesman	9.5	9.1	9.3	0.9%	3.4%	2.0%			
Farm or Ranch Owner (or Manager)	6.9	8.2	7.5						
Skilled Worker or Foreman (Baker, carpenter, electrician, plumber, etc.)	4.3	9.1	6.6	51.8	46.1	49.2	2.4%	6.0%	4.1%
Semi-skilled Worker, Clerical, or Protective Services	6.9	4.5	5.8	45.4	50.6	47.7	27.8	40.5	33.9
Laborer and Workman				1.9		1.0	69.8	53.4	62.0
Total	100.0	100.0	100.0	100.0	100.1	99.9	100.0	99.9	100.0

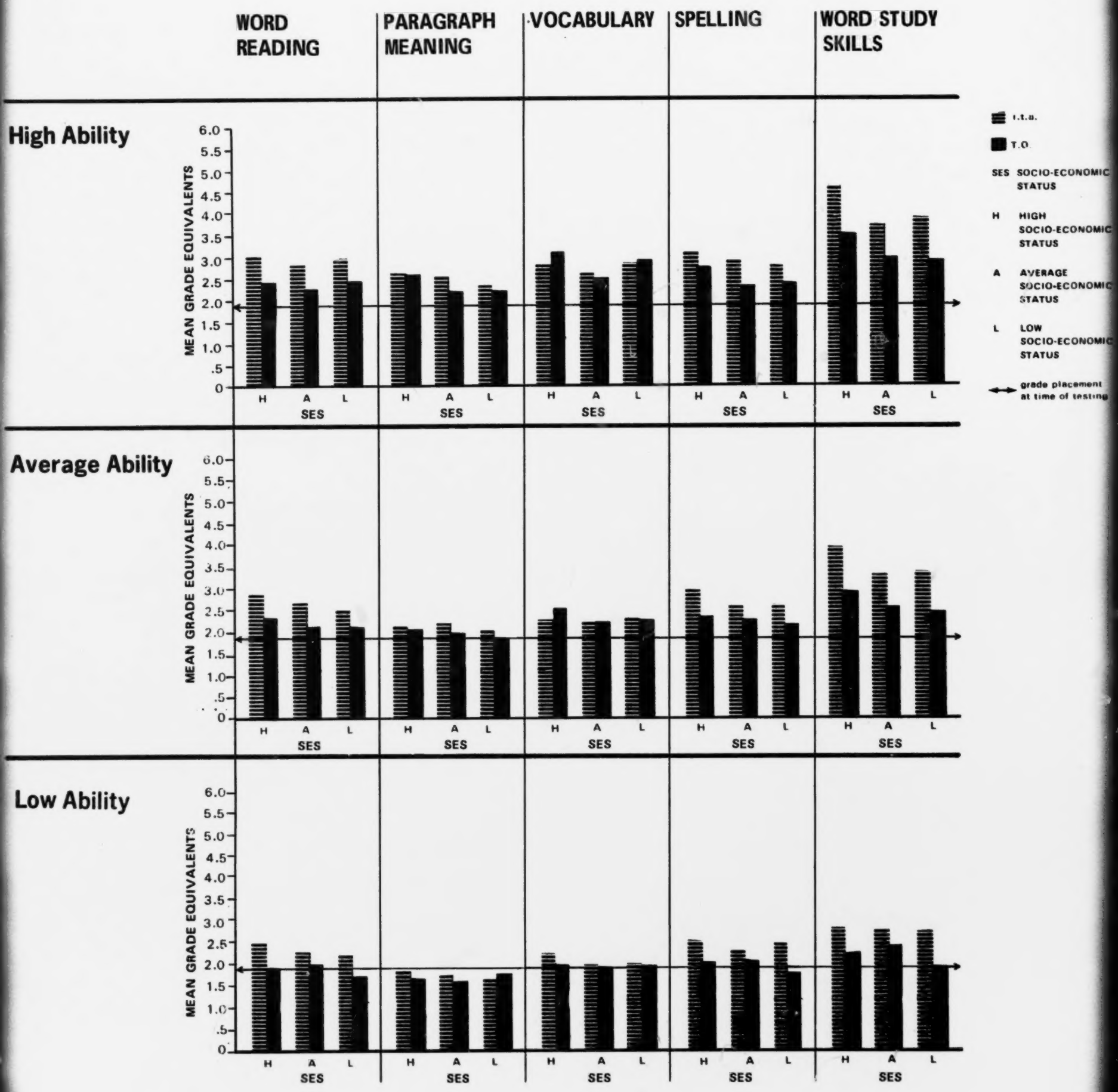
APPENDIX B (Continued)

TABLE B2

PERCENT OF FATHERS IN EACH EDUCATION CATEGORY BY EACH SES LEVEL

Fathers' Education Categories	High Level SES			Middle Level SES			Low Level SES		
	i.t.a.	T.O.	Total	i.t.a.	T.O.	Total	i.t.a.	T.O.	Total
Attended graduate or profession school	12.1%	10.9%	11.5%						
Graduated from a 4 year college	29.3	28.2	28.8						
Some college but less than 4 years	20.7	21.8	21.2	1.9%		1.0%			
Technical or business school after high school	10.3	10.9	10.6	4.6		2.5			
Graduated from high school	22.4	22.7	22.6	74.1	89.9%	81.2%	29.4%	18.1%	23.9%
Some high school but did not graduate	3.4	4.5	4.0	19.4	10.1	15.2	43.4	57.8	50.4
Completed grade school	1.7	0.9	1.3				22.2	17.2	19.8
None or some grade school							4.8	6.9	5.9
Total	99.9	99.9	100.0	100.0	100.0	99.9	100.0	100.0	100.0

Appendix C: Mean Achievement of High, Average and Low Ability Pupils of High, Average and Low Socio-economic Status During Grade One



Appendix C: Mean Achievement of High, Average and Low Ability Pupils of High, Average and Low Socio-economic Status During Grade Two